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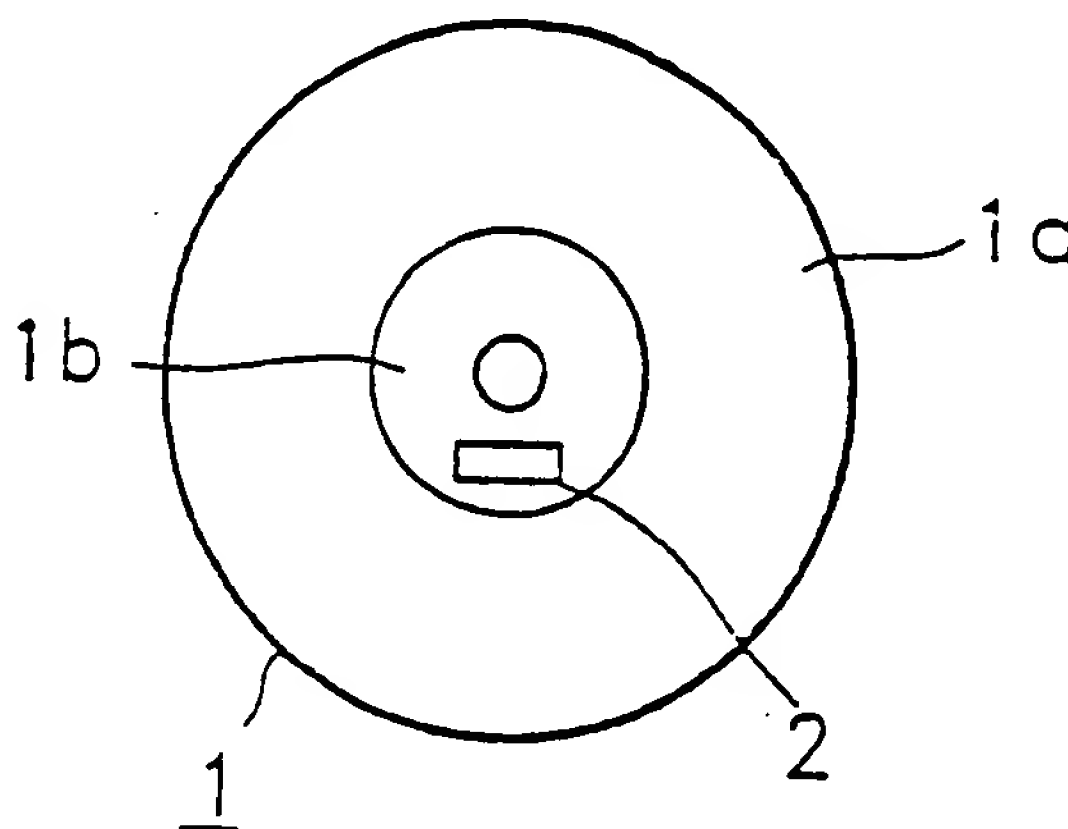
INT CL<sup>5</sup> G11B

Online databases: WPI, INSPEC.

(54) Video recording/reproducing apparatus and its usage

(57) A video recording/reproducing apparatus comprising a reader (10) for reading out information recorded on a label (2) formed on a non-recording portion of a video recording medium (1) having bibliographic information of the program recorded on the recording portion and/or information to limit access to the program. The apparatus further comprises a decoder (20) for decoding the read out information, a character signal storing unit (40), a controller (30) for controlling the whole apparatus, a video display (60) for outputting a video signal, and on-screen display (50) for converting the character string into a signal suitable for the video display (60), and a video record/playback unit (90) for reproducing the program recorded on the recording portion of the video recording medium (1) and outputting the reproduced program to the video display (60).

FIG. 1



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FIG. 1

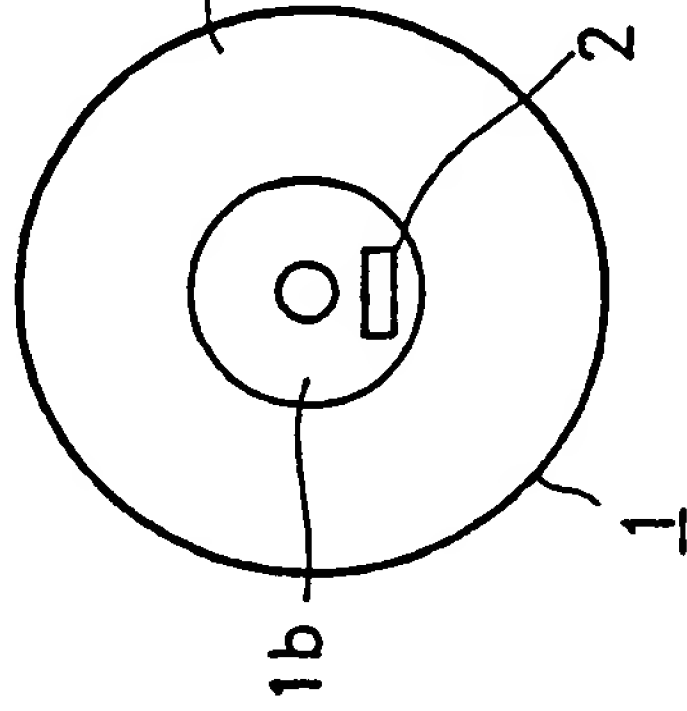


FIG. 2

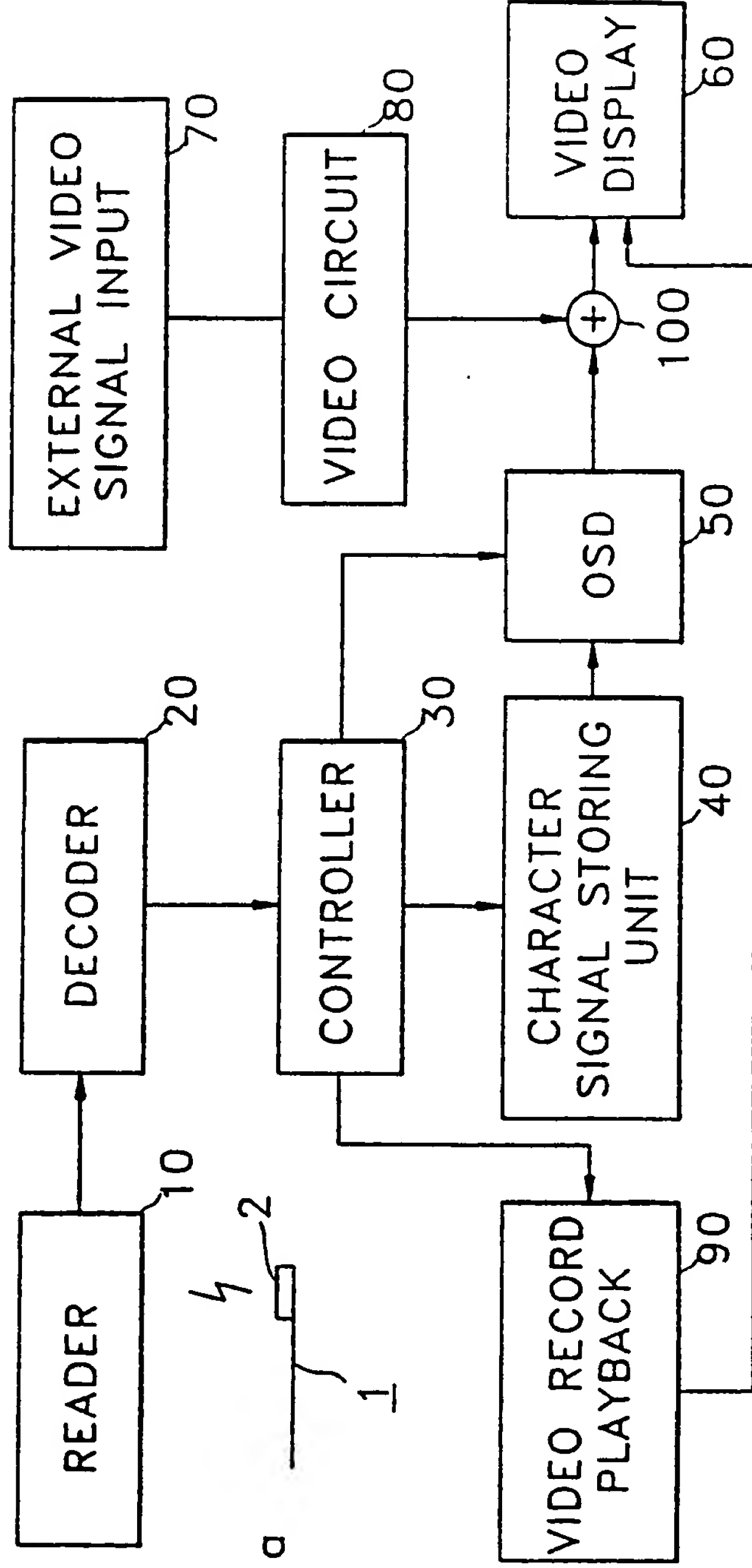


FIG. 3A

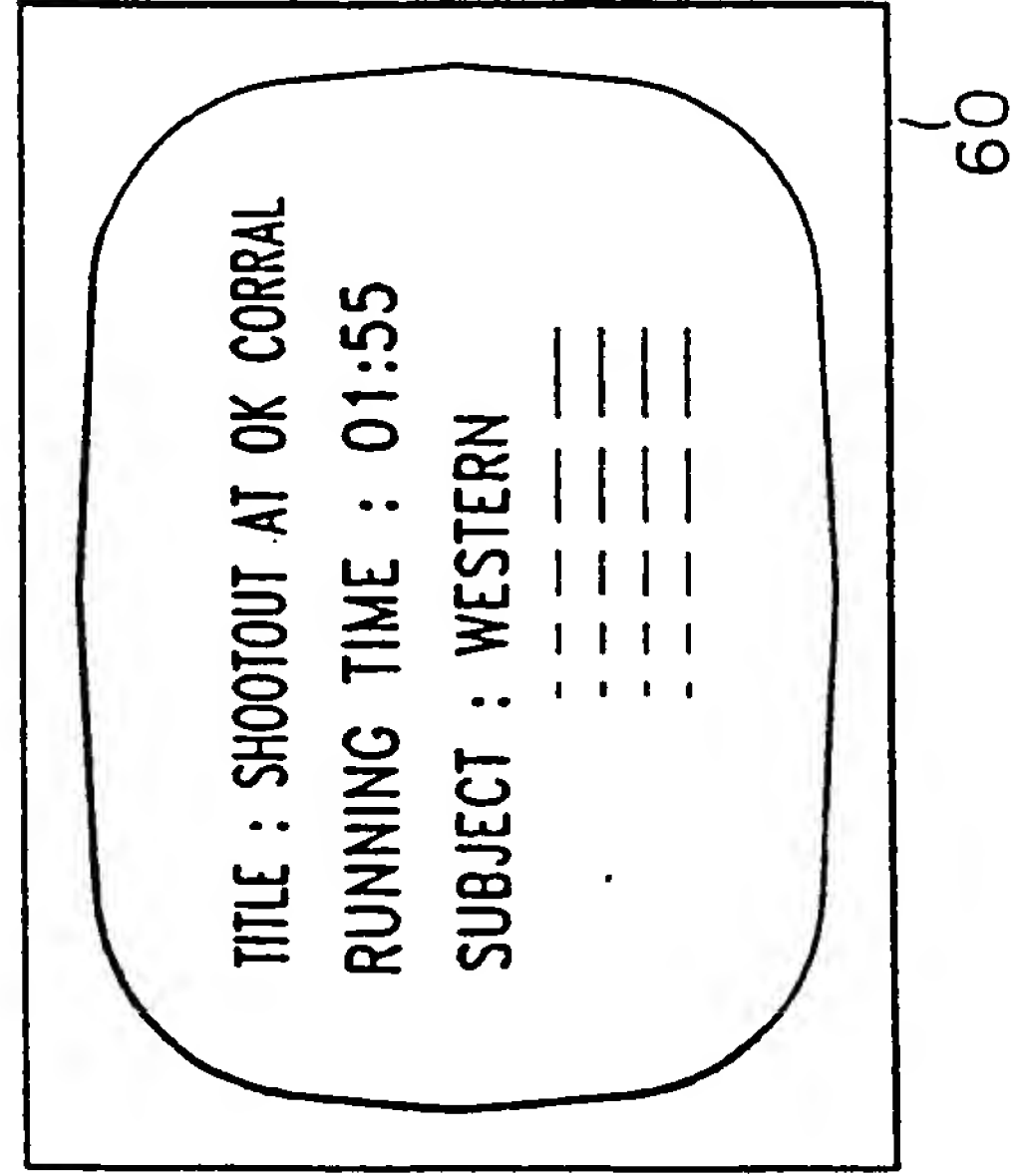


FIG. 3B

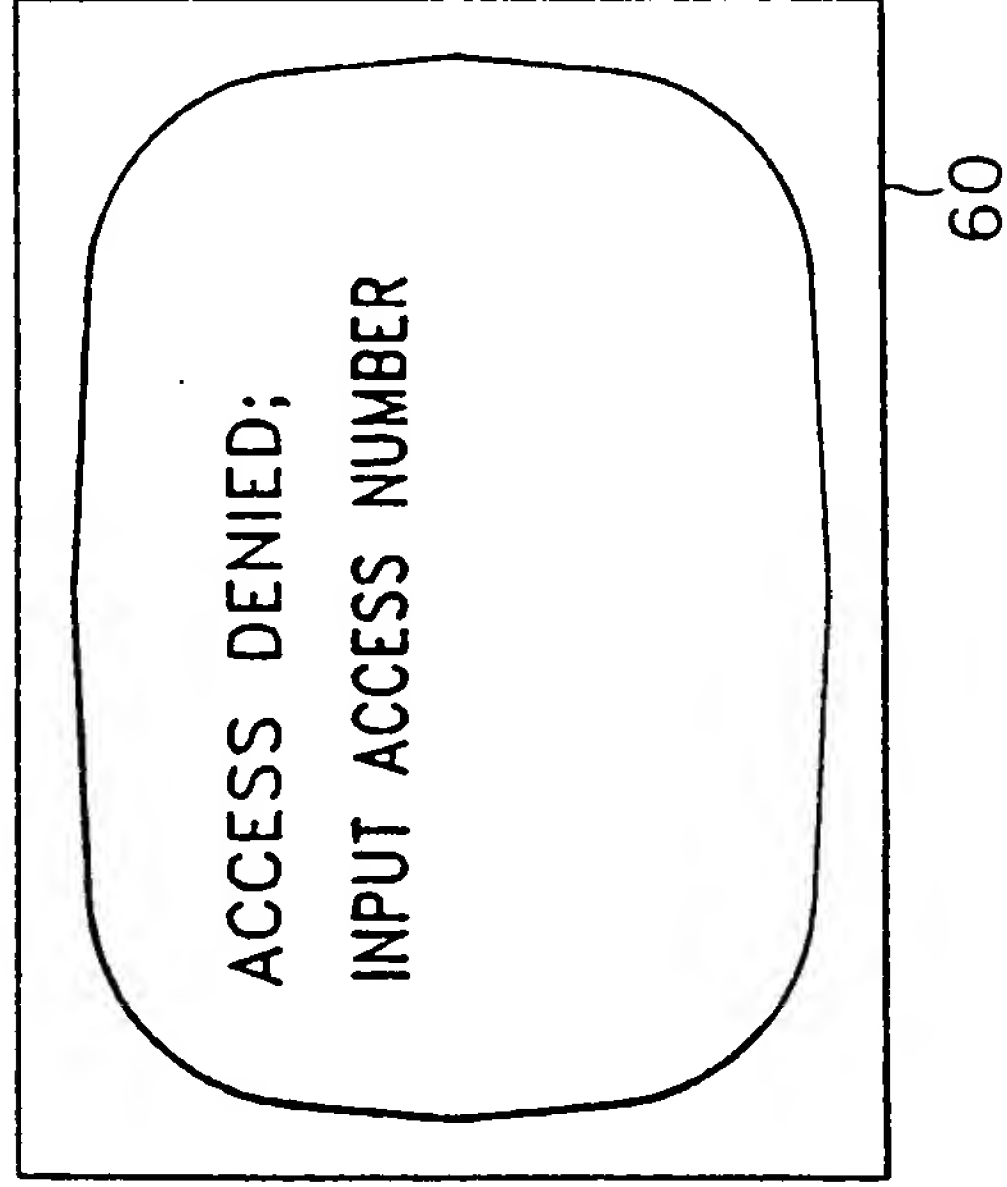


FIG. 4

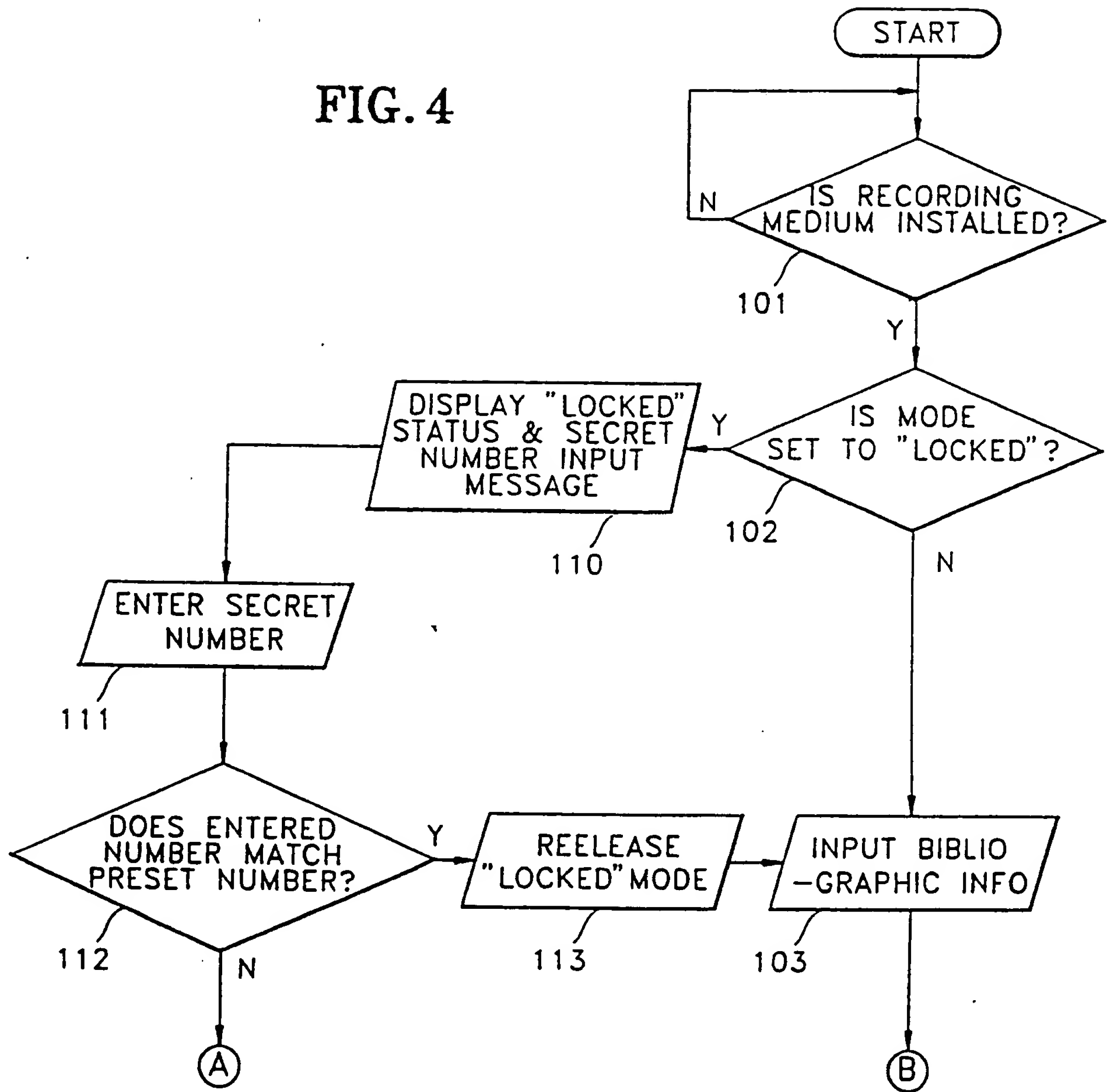
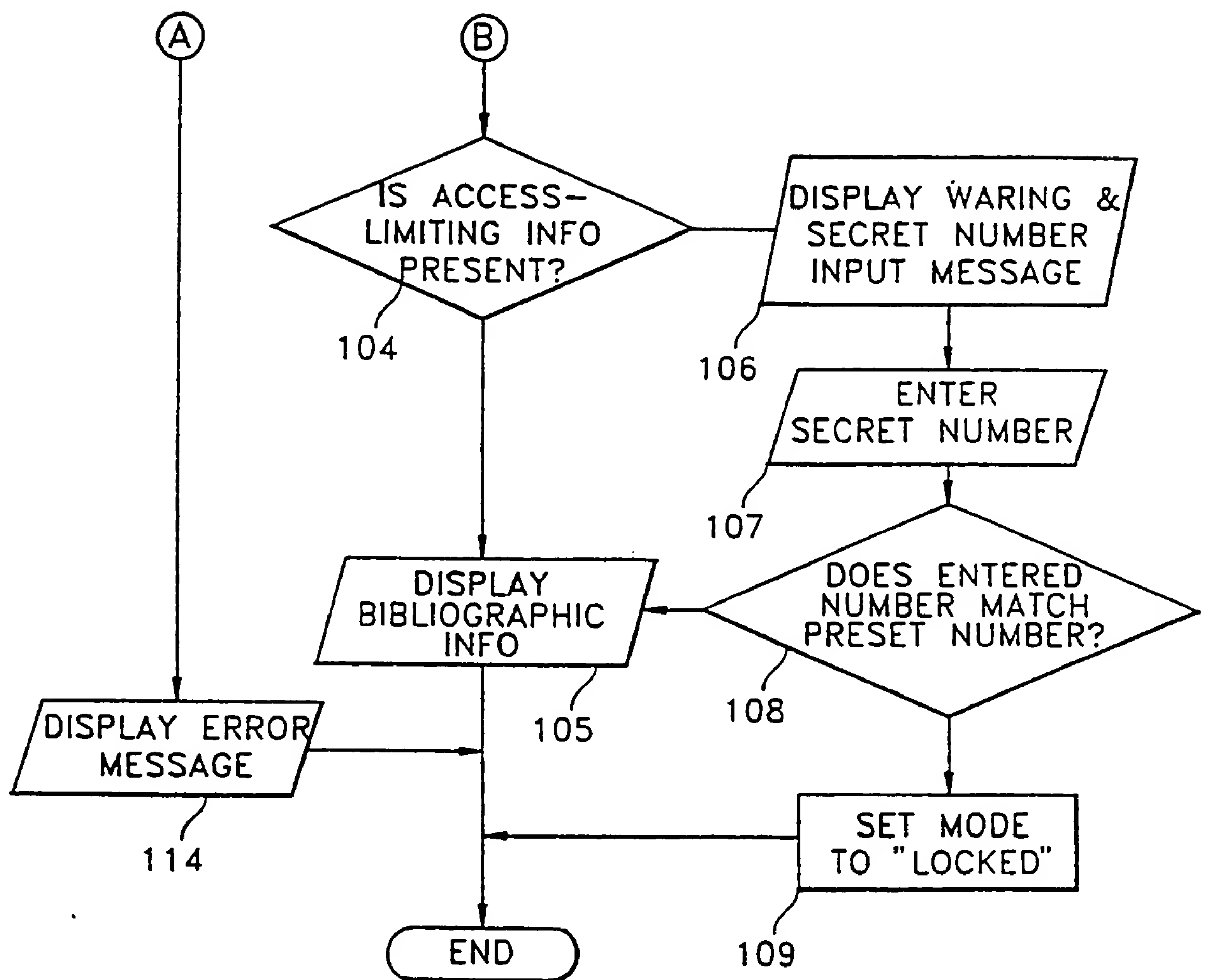


FIG. 4 (cont'd)



VIDEO RECORDING/REPRODUCING APPARATUS  
AND ITS USAGE

The present invention relates to a video recording/reproducing apparatus and its usage.

Recently, great developments have been attained in the field of video recording media which include a laser disk that is a video compact disk (VCD) and a filmless photo (still video) as well as conventional magnetic tape and video cassette. The advent of a video recording medium of the floppy disk type will occur in the near future.

According to such developments in video recording media, a market for programmed media is gradually spreading and consists of various programs such as movies or video games recorded on pre-packaged video recording media, so that the various programs can be enjoyed at home.

However, programs recorded on the programmed media range from programs which the whole family enjoy, to programs unsuitable for children as well as programs even some adults would find objectionable.

Further, due to the spread of portable video recorders such as camcorders, many ordinary people record programs which might include a program they do not want to be viewed freely.

Therefore, inventions employing so-called security system for limiting a user's access to a video record/playback apparatus have been disclosed. However, they are inconvenient because they use either a hardware

approach to block an operational panel, a deck or the power line of the apparatus, or a software approach to designate a secret access number to render the apparatus un-operational if an entered number does not match a previously stored number. However, even if an unauthorized user's access to the apparatus is somehow denied, the unauthorized user could get access to another apparatus having no security system, and thus reproduce the program. Moreover, the labelling information itself, which appears on the outer jacket of a recording medium, may be considered private.

Therefore, it is an object of an embodiment of the present invention to provide a video record/playback apparatus suitable for a video recording medium, whose contents are not accessible to an unauthorized user and which can be detected using a batch method, which permits determination of whether data is desired while watching the display.

It is another object of an embodiment of the present invention to provide a method for using the video recording medium and video record/playback apparatus, that is, an accessing method or a medium detection method, using the recording medium and apparatus.

According to one aspect of the invention there is provided a video record/playback apparatus comprising: a reader for reading out information recorded on a label formed on a non-recording portion of a video recording medium which has a recording portion where a program is recorded on a non-recording portion formed with a label

having bibliographic information of the program recorded on said recording portion and/or information to limit access to the program; a decoder for decoding the information read out from the reader, a character signal storing unit for storing a character signal; a controller having a memory for controlling the output of a corresponding character string from the character signal storing unit according to the output from the decoder and controlling the whole apparatus; a video display for outputting a video signal; an on-screen display (OSD) for converting the character string called from the character signal storing unit into a signal suitable for the video display, and a video record/playback unit for reproducing the program recorded on the recording portion of the video recording medium and outputting the reproduced program to the video display.

According to another aspect of the invention there is provided an access method, having a label on the non-recording portion of a video recording medium having a recording portion where a program is recorded, which includes bibliographic information and/or access-limiting information which is unreadable to the naked eye, comprising the steps of reading out the label, and, if the access-limiting information is not included therein, video-displaying the bibliographic information and permitting access to the recording portion of the video recording medium, or, if the access-limiting information is included therein, restricting video display of the bibliographic



information and access to the recording portion of the video recording medium.

According to a further aspect of the present invention, there is also provided a detection method, having a label on a non-recording portion of a video recording medium comprising a recording portion where the program is recorded, which includes bibliographic information indicating the contents of a program, for reading out the label and video-displaying the bibliographic information.

Embodiments of the present invention will now be described, by way of example, with reference to the accompanying drawings in which:

Fig. 1 is a plan view of an embodiment of a recording medium for use in a video record/playback apparatus according to the present invention;

Fig. 2 is a block diagram of an embodiment of a video record/playback apparatus according to the present invention;

Figs. 3A and 3B illustrate examples of information output to a video display shown in Fig. 2; and

Fig. 4 is a flowchart illustrating an embodiment of an accessing method for the video recording apparatus of the present invention.

Referring to Fig. 1, a video recording medium 1 has a recording portion 1a where a program

is recorded and a non-recording portion 1b where no program is recorded. A label 2 including proper bibliographic information is printed or adhered on non-recording portion 1b. The information recorded on label 2 includes for instance, the title of a program, its running time and subject, and if necessary, even a secret number or a flag about whether or not access is permitted. Such information on label 2 is recorded in an appropriate manner corresponding to the type of reader for a video record/playback apparatus to be mentioned later, for example, an optical reading or magnetic reading method. According to a users purposes, the information is recorded with visibly readable character information, codes which cannot be read with the naked eye together with the readable character information, or just the codes. The label illustrated in the drawings can be used for any recording medium such as video compact disk, video cassette, or floppy disk.

Referring to Fig.2, a video record/playback apparatus comprises a reader 10 for reading out bibliographic information recorded on label 2 of video recording medium 1, a decoder 20 for decoding the information read out from reader 10, a character signal storing unit 40 for storing character signals corresponding to a character or a figure, a controller 30 for controlling the output of a corresponding character string from character signal storing unit 40 and controlling the whole system according to the output signal of the decoder 20, a video display 60 for converting an input signal into a user

readable video signal as an output, and an OSD 50 for addressing and converting the character string called from character signal storing unit 40 so as to make the string suitable for video display 60.

The video record/playback apparatus further comprises a video record/playback unit 90 for reproducing the program recorded on the recording portion of video recording medium 1, an external video signal input unit 70 for inputting a broadcast signal, a cable signal, or R, G, B information from a computer, a video circuit 80 for video-processing the output of external video signal input unit 70, and an adder 100 for adding the outputs of video circuit 80 and on-screen display (OSD) 50 and outputting the result to video display 60.

Here, it is desirable that reader 10 and decoder 20 be, for instance, an optical mark reader or a magnetic reader and a corresponding decoding circuit according to the form of the information recorded on label 2 of the video recording medium 1. The reader and decoder are, for example, placed on a deck where the video recording medium is mounted. It is also desirable that controller 30 be a microcomputer having a suitable memory and that character signal storing unit 40 be, for example, a character generator. Meanwhile, OSD 50 consists of a circuit for addressing the character string which is output from character signal storing unit 40 to a location on video display 60 in a certain size and color under the control of the controller 30. It is still desirable that video display 60 is composed of a visual display such as a cathode ray tube

or a liquid crystal display (LCD) and its driver, external video signal input unit 70 to be a tuner or a frequency converter, and video circuit 80 be an ordinary video display circuit including an amplifier and suchlike.

Using the video record/playback apparatus described above in detail, operation when access to the apparatus is limited will be described below with reference to Fig.4.

When the apparatus does not operate or outputs a broadcasting signal input to external video signal input unit 70, if video recording medium 1 of the present invention is mounted on a deck, controller 30 checks whether or not video recording medium 1 is installed in a deck (step 101). Reader 10 reads out bibliographic information recorded on label 2 to output the information to decoder 20. Decoder 20 converts the information into a signal which controller 30 is able to read out and supplies the signal to controller 30.

Controller 30 decides whether or not the current mode is a locked mode (step 102). If the mode is an unlocked mode, bibliographic information supplied from decoder 20 is input (step 103). Then, controller 30 checks whether or not access-limiting information included in the input bibliographic information is present (step 104). If no access-limiting information is present, the bibliographic information is displayed (step 105). To display the information, controller 30 calls a corresponding character string from character signal storing unit 40 and outputs the string to video display 60 via OSD 50 and adder 100. If, for example, access-limiting

information is not recorded on label 2, the form of displayed information is as shown in Fig.3A, wherein basic information such as the title, running time and subject is displayed in order for a user to view the contents. Here, the user can install another video recording medium on the deck and thereby detect its contents, or can convert the mode of the apparatus into a playback mode via an appropriate means such as the keypad for operating video record/playback unit 90 so that the user sees a recorded program via video display 60.

Meanwhile, if information to limit access is on label 2 of video recording medium 1, that is, a secret number or a flag is recorded in step 104, controller 30 displays for example, a warning such as "access denied" and an input instruction requesting the secret number, as shown in Fig.3B (step 106). When the secret number is correctly entered (step 107), step 108 checks whether or not the input number matches a preset secret number. If the numbers match, step 105 displays information such as that shown in Fig.3A. If the input number does not match the secret number stored in controller 30, in order to restrict the user's access, step 109 sets the mode to the locked mode, stopping the operation of video record/playback unit 90. If the apparatus is in the locked mode in step 102, step 110 displays that fact along with the secret number input instruction. If the secret number is entered (step 111), step 112 checks whether or not the input secret number matches a preset secret number. If the numbers match, step 113 releases the locked mode to perform step 103. If the numbers

do not match, step 114 displays an error message which completes the access portion of the program.

Since the method for detecting the contents of the video recording medium using the video record/playback apparatus of the present invention is similar to the operation of the access method, wherein access-limiting information is not recorded on label 2, the description is omitted.

The present invention is advantageous in preventing indiscreet playback of a program with sensitive contents by recording bibliographic information which is unreadable by the naked eye on a video recording medium, and requesting and detecting access to the information by means of the video record/playback apparatus of the present invention, thus preventing an unauthorized user from reproducing the contents of the program. Further, if a video record/playback apparatus capable of selectively mounting a plurality of video recording media in its deck is realized, this detection method will be quite effective.

CLAIMS:

1. A video record/playback apparatus comprising:
  - a reader for reading out information recorded on a label on a non-recording portion of a video recording medium which has a recording portion where a program is recorded and a non-recording portion with said label having bibliographic information of the program recorded on said recording portion and/or information to limit access to the program;
  - a decoder for decoding the information read out from said reader;
  - a character signal storing unit for storing a character signal;
  - a controller having a memory, for controlling the output of a corresponding character string from said character signal storing unit according to the output from said decoder and for controlling the whole apparatus;
  - a video display for outputting a video signal;
  - an on-screen display for converting the character string called from said character signal storing unit into a signal suitable for said video display; and
  - a video record/playback unit for reproducing the program recorded on said recording portion of said video recording medium and outputting the reproduced program to said video display.
2. An access method for a video record/playback apparatus which comprises reading out a label on a non-recording portion of a video recording medium which also has

a recording portion where a program is recorded, said label including bibliographic information and/or access-limiting information which is unreadable with the naked eye; and

video-displaying the bibliographic information and permitting access to said recording portion of said video recording medium if access-limiting information is not read out, or, restricting the video display of the bibliographic information and access to said recording portion of said video recording medium if the access-limiting information is read out.

3. A detection method of video recording media for a video/playback apparatus, said method comprising reading out a label on a non-recording portion of a video recording medium having a recording portion where the program is recorded, said label including bibliographic information indicating the contents of a program; and

video-displaying the bibliographic information.

4. A video record/playback apparatus substantially as hereinbefore described with reference to Figure 2 with or without reference to any of Figures 3 or 4 of the accompanying drawings.

5. An access method for a video record/playback apparatus substantially as herein described with reference to the accompanying drawings.

6. A detection method of a video recording medium for a video/playback apparatus, substantially as herein described with reference to the accompanying drawings.



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Examiner's report to the Comptroller under  
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-12-

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Relevant Technical fields

(i) UK CI (Edition K ) G5R (RHB, RME, RJA)

(ii) Int CL (Edition 5 ) G11B

Search Examiner

A J RUDGE

Databases (see over)

(i) UK Patent Office

(ii) ONLINE DATABASES: WPI, INSPEC

Date of Search

12 MAY 1992

Documents considered relevant following a search in respect of claims

1, 2 AND 4-6

Category (see over)	Identity of document and relevant passages	Relevant to claim(s)
A	US 4571713 (NEWS LOG. INTL) See whole document	1 at least
A	US 4329575 (RCA) See column 1 line 65 to column 2 line 14 and column 4 lines 25-39	1 at least
A	US 4280136 (SONY) eg. Claim 1	1 at least

Category	Identity of document and relevant passages	Relevant to claim(s)

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